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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,511	02/12/2002	Susana Salceda	DEX-0314	9814

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EXAMINER
LY, CHEYNE D

ART UNIT	PAPER NUMBER
1631	

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

3M.

Office Action Summary	Application No.	Applicant(s)	
	10/074,511	SALCEDA ET AL.	
	Examiner	Art Unit	
	Cheyne D Ly	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/08/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' arguments filed February 09, 2004 have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

2. The cancellation of claims 6 and 9-17 has been acknowledged.

3. Claims 1-5, 7, and 8, SEQ ID NO. 65, are examined on the merits.

CLAIM REJECTIONS - 35 U.S.C. § 112, FIRST PARAGRAPH

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. NEW MATTER REJECTION.

7. This rejection is necessitated by Applicants amendments.

8. Specific to claim 1, lines 13-14, the limitation of "nucleic acid molecule of…is differentially expressed in breast cancer" is considered to be new matter due to said limitation has not been found in the pointed to support. It is acknowledged that the instant

specification discloses BSNAs show a high degree of tissue specificity for the tissue of interest (page 118, lines 11-12) and the mRNA over-expression in matching samples tested are indicative of SEQ ID NO. 65 being diagnostic markers for cancer (page 118, lines 18-20) which is different from said limitation of breast cancer. The recitation of more limited limitation of "breast cancer" in the instant claims, while the instant specification discloses "cancer" causes the limitation "breast cancer" in claim 1 to be new matter. Claims 2-5, 7, and 8 are rejected for being dependent from claim 1.

LACK OF UTILITY UNDER 35 U.S.C. § 101

9. The pending claims have been reviewed in light of the Utility Examination Guidelines and Guidelines for Examination of Patent Applications under 35 U.S.C. 112, first paragraph, "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1092-1111, Friday, January 5, 2001.

10. The examiner is using the following definitions in evaluating the claims for utility.

"Specific" - A utility that is *specific* to the subject matter claimed. This contrasts with a *general* utility that would be applicable to the broad class of the invention.

"Substantial" - A utility that defines a "real world" use. Utilities that require or constitute carrying out further research to identify or reasonably confirm a "real world" context of use are not substantial utilities.

"Credible" - Credibility is assessed from the perspective of one of ordinary skill in the art in view of the disclosure and any other evidence of record that is probative of the applicant's assertions. That is, the assertion is an inherently unbelievable undertaking or involves implausible scientific principles.

"Well-established" - a specific, substantial, and credible utility which is well known, immediately apparent, or implied by the specification's disclosure of the properties of a material, alone or taken with the knowledge of one skilled in the art.

35 U.S.C. § 101 reads as follows:

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title".

11. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. § 101 because the claimed invention lacks patentable utility due to its not being supported by a specific, substantial, and credible utility or, in the alternative, a well-established utility.

12. This rejection is maintained with respect to claims 1-5, 7, and 8, as recited in the previous office action mailed September 08, 2003.

RESPONSE TO ARGUMENT

13. Applicant's argument by pointed to support, which asserts that Examples 1 and 2 disclose SEQ ID NO:65 to be breast specific by mRNA subtraction analysis and to be differentially expressed in breast cancer samples versus normal adjacent tissue thus indicating its utility as a diagnostic maker for cancer, has been fully considered and found to be unpersuasive.

14. SEQ ID NO:65 has not been found in Example 1, therefore, the Examiner has not been able to verify Applicant's assertion that SEQ ID NO:65 to be breast specific by mRNA subtraction analysis.

15. Example 2 discloses total RNA is extracted from normal tissues, cancer tissues,..adjacent tissues. "BSNAs show a high degree of tissue specificity for the tissue of interest." The mRNA over-expression in matching samples tested are indicative of SEQ ID NO. 65 being diagnostic markers for cancer. However, the instant specification does not support Applicant's assertion that SEQ ID NO:65 is differentially expressed in breast cancer samples versus normal adjacent tissue because the pointed to support does not disclose RNA is from

breast cancer specific tissue versus normal breast tissue. The disclosure pointed to by Applicant falls short of providing any specific or substantial utility support for the asserted utility of SEQ ID NO:65 in breast cancer as claimed.

REJECTION RE-ITERATED

16. The critical limitation of claims 1-5, 7, and 8 is the claimed polynucleotide SEQ ID NO: 65. While some data are supplied for several sequences, such as for OligoID 24441 on page 120 (untitled table), no data therein indicate any specificity regarding the elected SEQ ID NO: 65. The claimed nucleic acid is not supported by a specific asserted utility because the other disclosed uses (not specified for any particular sequence) mentioned in the specification are generally applicable to many nucleic acids. The specification states that the polynucleotide sequences may be useful as probes for detecting BSNA (page 40, lines 20-30), producing BSP polypeptides (page 44, lines 16-77) and antibodies specific for BSP (page 77-88). The above-mentioned list of desirable utility for the claimed sequence falls short of a readily available utility. These are non-specific uses that are applicable to nucleic acids in general and not particular or specific to the polynucleotide being claimed.

17. Further, the claimed polynucleotide is not supported by a substantial utility because no substantial utility has been established for the claimed subject matter. For example, a nucleic acid may be utilized to obtain a protein. The protein could then be used in conducting research to functionally characterize the protein. A starting material that can only be used to produce a final product does not have substantial asserted utility in those instances where the final product is not supported by a specific and substantial utility. In this case, the protein produced as a final product resulting from processes involving the nucleic acid does not have

asserted or identified specific and substantial utilities. Identifying and studying the properties of a protein itself or the mechanisms in which the protein is involved, such as the BSP encoded by SEQ ID NO: 65, does not define a "real world" context for use. Similarly, the other listed utilities and asserted utilities as summarized above or in the instant specification are neither substantial nor specific due to being generic in nature and applicable to many such compounds.

18. Applicants disclose the nucleic acid molecule exhibits substantial sequence similarity to a BSNA or its complement (page 32, line 22 to page 33, line 29). It is noted that applicant has identified a sequence which is known in the prior art and which has a stated sequence similarity to the claimed sequence. Absent factual evidence, one skilled in the art would have reason to doubt that sequence similarity alone would reasonably support the assertion that the biological activity of the claimed subject matter would be the same as that of the similar sequence. Furthermore, it is unclear whether the similar sequence identified in the prior art has actually been tested for the biological activity or whether this also is an asserted biological activity based upon sequence similarity to yet a different sequence. Note that it would have been well known in the art that sequence similarity does not reliably correlate to structural similarity and that structural similarity does not reliably result in similar or identical biological activities. For example, it would have been well known that even a single nucleotide or amino acid change or mutation can destroy the function of the biomolecule in many instances, albeit not in all cases. In the absence of factual evidence characterizing the structural and functional components of the biomolecule, the effects of these changes are largely unpredictable as to which ones will have a significant effect and

which ones will be silent mutations having no effect. Several publications document the unpredictability of the relationship between sequence, structure, and function, although it is acknowledged that certain specific sequences have been found to be conserved in biomolecules having related function following a significant amount of further research. See Lopez et al. (Molecular Biology, 32:881-891,1999); Attwood (Science, 290:471-473, 2000); Gerhold et al. (BioEssays, 18(12):973-981, 1996); Wells et al. (Journal of Leukocyte Biology, 61(5):545-550, 1997); and Russell et al. (Journal of Molecular Biology, 244:332-350, 1994). However, this level of factual evidence is absent here.

REJECITON UNDER U.S.C. § 112, FIRST PARAGRAPH

19. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

LACK OF ENABLEMENT

20. Claims 1-5, 7 and 8 are rejected under 35 U.S.C. § 112, first paragraph as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the claimed sequence. For a sequence putatively assigned a biological function, even if correct, does not appear to be defined as to what use it is to be applied to. The significance of the sequence is undefined, further rendering it indiscernible how someone of skill in the art would use such an entity.

21. This rejection is maintained with respect to claims 1-5, 7, and 8, as recited in the previous office action mailed September 08, 2003.

22. The claimed invention is not supported by a specific, substantial, and credible utility or a well-established utility for the reasons set forth above (refer to 35 U.S.C. § 101 rejection), one skilled in the art would not know how to use the claimed invention.

LACK OF WRITTEN DESCRIPTION

23. Claims 1-5, 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

24. This rejection is maintained with respect to claims 1-5, 7, and 8, as recited in the previous office action mailed September 08, 2003. Further, the instant rejection has been extended to the limitation of "molecule having at least 95% sequence identify" of claim 1, step(d).

25. This rejection is necessitated by Applicants amendments.

RESPONSE TO ARGUMENT

26. Applicant's argument and amendment have been fully considered and found to be unpersuasive as discussed below.

27. Specific to the argument that the amended claims clearly set forth the definitive structural features required by 35 U.S.C. §112, first paragraph, the instant specification discloses nucleic acid molecule SEQ ID NO. 65, and said specification and claims recite the criteria for selecting sequences which hybridize with SEQ ID NO. 65 and sequences having a degree of identity to the sequence of SEQ ID NO. 65. However, the instant specification does not disclose the sequences being claimed by claims 1-5, 7 and 8 which are sequences which hybridize with SEQ ID NO. 65 and sequences having a degree of identity to the sequence of

SEQ ID NO. 65. The disclosure of criteria which are used to determine sequences that hybridize to the sequence of SEQ ID NO. 65 under specific conditions only provide to one of ordinary skill in the art the criteria for isolating the proposed hybridizing sequence, but does not specifically provide support that Applicant is in possession of the sequences as being claimed.

28. Specific to the limitation of molecule having at least 95% sequence identity to the sequence of step (a) or (b), the disclosure of sequences having a degree of identity to the sequence of SEQ ID NO. 65 only provides to one of ordinary skill in the art the criteria for isolating the molecule via similarity searches, but does not specifically provide support that Applicant is in possession of the sequences as being claimed.

29. Therefore, the claims invention, as directed to sequences that hybridize to the sequence of step (a) or (b), and molecule having at least 95% sequence identity to the sequence of step (a) or (b), do not have written description basis as required by 35 U.S.C. 112, first paragraph.

REJECTION RE-ITERATED

30. The specification discloses SEQ ID NO: 65, which corresponds to DNA encoding BNA. Claims 1-5, 7, and 8 are directed to encompass gene sequences, sequences that hybridize to the sequence of step (a) or (b), and molecule having at least 95% sequence identity to the sequence of step (a) or (b). None of these sequences meet the written description provision of 35 USC 112, first paragraph. The specification provides insufficient written description to support the genus encompassed by the claim.

> Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does

> not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

31. With the exception of SEQ ID NO: 65, the skilled artisan cannot envision the detailed chemical structure of the encompassed polynucleotides and/or proteins, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016. In Fiddes v. Baird, 30 USPQ2d 1481, 1483, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence.

> University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 held that:
> ...To fulfill the written description requirement, a patent specification must describe an invention and does so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." Lockwood v. American Airlines, Inc. , 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); In *re Gosteli* , 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood* , 107 F.3d at 1572, 41 USPQ2d at 1966.

32. Therefore, only SEQ ID NO: 65 but not the full breadth of the claims 1-5, 7, and 8 meet the written description provision of 35 USC 112, first paragraph. The species specifically disclosed are not representative of the genus because the genus is highly variant. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.)

CONCLUSION

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

34. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

35. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet.

The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

36. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Dune Ly, whose telephone number is (571) 272-0716. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

38. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (571) 272-0722.

C. Dune Ly

8/25/04